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TITLE: The relation of the surface tension of a liquid to the wetting effect

AUTHOR(S): Benedicks, Carl

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AB The wetting effect is an alteration of the resistance of a solid to rupture (bending test in Chevenard's micromachine) when a liquid wets it; the effect is neg. (decreased resistance) for most liquids but pos. for some (Rev. M.acte.et. 45, 9(1948); 46, 291(1949); C.A. 41, 3030d). Solids studied included hardened steel, plate glass, marble, and **sugar**; liquids included hydrocarbons, Et<sub>2</sub>O, glycerol, glycol, EtOH, CCl<sub>4</sub>, H<sub>2</sub>O, and aq. NaOH. The neg. wetting effect on a given solid is a linear function of the surface tension of normal liquids. The greater the surface tension the more the resistance is reduced. Pos. wetting effects, however, may be related to the formation of adsorbed, oriented unimol. layers rather than to surface tension. Solids of low **Mohs hardness** undergo relatively greater reduction in resistance to rupture than do harder solids.